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## NOTICE OF ALLOWANCE AND FEE(S) DUE

23735 7590 11/02/2004  
DIGIMARC CORPORATION  
9405 SW GEMINI DRIVE  
BEAVERTON, OR 97008

EXAMINER	
JOHNS, ANDREW W	
ART UNIT	PAPER NUMBER
2621	//
DATE MAILED: 11/02/2004	

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/811,366	03/15/2001	Geoffrey B. Rhoads	P0325	6399

TITLE OF INVENTION: PRINTING MEDIA AND METHODS EMPLOYING DIGITAL WATERMARKING

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1370	\$300	\$1670	02/02/2005

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.**

**THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.**

### HOW TO REPLY TO THIS NOTICE:

#### I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

- A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.
- B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

- A. Pay TOTAL FEE(S) DUE shown above, or
- B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL should be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). Even if the fee(s) have already been paid, Part B - Fee(s) Transmittal should be completed and returned. If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER:** Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

# **PART B - FEE(S) TRANSMITTAL**

**Complete and send this form, together with applicable fee(s), to:** **Mail** **Mail Stop ISSUE FEE**  
**Commissioner for Patents**  
**P.O. Box 1450**  
**Alexandria, Virginia 22313-1450**  
**or Fax (703) 746-4000**

**INSTRUCTIONS:** This form should be used for transmitting the **ISSUE FEE** and **PUBLICATION FEE** (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

**CURRENT CORRESPONDENCE ADDRESS** (Note: Use Block 1 for any change of address)

23735 7590 11/02/2004

**DIGIMARC CORPORATION**  
**9405 SW GEMINI DRIVE**  
**BEAVERTON, OR 97008**

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

## **Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (703) 746-4000, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/811,366	03/15/2001	Geoffrey B. Rhoads	P0325	6399

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nonprovisional	NO	\$1370	\$300	\$1670	02/02/2005

EXAMINER	ART UNIT	CLASS-SUBCLASS
JOHNS, ANDREW W	2621	382-100000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 \_\_\_\_\_
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 \_\_\_\_\_
- 3 \_\_\_\_\_

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are enclosed:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies \_\_\_\_\_

4b. Payment of Fee(s):

- ☐ A check in the amount of the fee(s) is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized by charge the required fee(s), or credit any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

The Director of the USPTO is requested to apply the Issue Fee and Publication Fee (if any) or to re-apply any previously paid issue fee to the application identified above. NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature \_\_\_\_\_

Date \_\_\_\_\_

Typed or printed name \_\_\_\_\_

Registration No. \_\_\_\_\_

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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DIGIMARC CORPORATION 9405 SW GEMINI DRIVE BEAVERTON, OR 97008			EXAMINER JOHNS, ANDREW W	
			ART UNIT	PAPER NUMBER
			2621	//
DATE MAILED: 11/02/2004				

## Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 555 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 555 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (703) 305-1383. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (703) 305-8283.

# Notice of Allowability

Application No.

09/811,366

Examiner

Andrew W. Johns

Applicant(s)

RHOADS ET AL.

Art Unit

2621

## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed 23 Apr 2004 and the interview of 19 Oct 2004.
2. ☒ The allowed claim(s) is/are 1-50.
3. ☒ The drawings filed on 23 April 2004 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

### Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 7,8,9
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date 10.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

# 11 B  
Della  
10-27-04

**EXAMINER'S AMENDMENT**

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 C.F.R. § 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with William Conwell (Reg. No. 31,943) on 19 October 2004.

The application has been amended as follows:

In the specification:

On page 6, prior to line 25, insert the following:

**--Brief Description of the Drawings**

Figure 1 shows a prior art watermarking system.

Figure 2 is an overall system diagram of the present invention.

Figure 3 illustrates the correspondence between the luminance values in a watermark tile and areas in the output image.

Figure 4 is a flow diagram of the present invention.

Figure 5 shows the lines in an output image.

Figure 6 shows an alternative arrangement of lines in an output image.

Figure 7 is an overall diagram of an output image.

Figure 8 is a block diagram illustrating a printer architecture that reads digital watermarks to obtain printer control information.--

On page 12, cancel lines 1-10.

On page 19, cancel lines 14-15.

On page 26, cancel lines 21-23.

Amend claims 1, 5, 18, 21, 30, 49 and 50 as shown:

sub  
cl  
5  
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1. (Currently Amended) A substrate to which final user printing can be later applied to yield a final printed object, characterized in that the substrate has been processed prior to final user printing to yield a steganographic digital watermark pattern thereon that does not impair subsequent use of the substrate, yet ~~conveys plural bits of digital information~~ encodes multi-bit binary data, the presence of said ~~information~~ multi-bit binary data not being apparent to a human observer of the substrate, said steganographic pattern being detectable by visible-light scanning of the substrate to yield data from which the ~~plural bit information~~ multi-bit binary data can be recovered.

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sub  
cl  
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9. (Currently Amended) A substrate to which final user printing can be later applied to yield a final printed object, characterized in that the substrate has been processed prior to final user printing to yield a steganographic digital watermark pattern thereon that does not impair subsequent use of the substrate, yet conveys plural bits of digital information, the presence of said information not being apparent to a human observer of the substrate, said steganographic pattern being detectable by visible-light scanning of the substrate to yield data from which the plural bit information can be recovered; wherein the substrate has been processed with ink to form the steganographic digital watermark pattern thereon, and the ink forms a mesh of thin lines.

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11.  
18. (Currently Amended) The substrate of claim 1 in which said ~~plural bits of digital information~~ multi-bit binary data comprise an identifier, said identifier serving to convey information indicative of an electronic address.

sub  
cl  
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14.  
21. (Currently Amended) The substrate of claim 1 in which the ~~plural bits of digital information~~ multi-bit binary data comprise serialization information, permitting the printed object to be uniquely identified from other, seemingly identical, printed objects.

sub  
cl  
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31.  
30. (Currently Amended) A method of processing a blank substrate prior to final printing by an end-user, the method comprising forming a steganographic digital watermark

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pattern on the substrate that does not impair subsequent use of the substrate, yet ~~conveys plural bits of digital information~~ encodes multi-bit binary data, the presence of said ~~information~~ multi-bit binary data not being apparent to a human observer of the substrate, said steganographic pattern being detectable by visible-light scanning of the substrate to yield data from which the ~~plural bit information~~ multi-bit binary data can be recovered.

18.  
49. (Currently Amended) The substrate of claim 1 wherein said ~~plural bits of digital information~~ multi-bit binary data correspond to said pattern in accordance with an algorithmic transformation.

10.  
44.  
50. (Currently Amended) The method of claim ~~[[1]]-30~~ <sup>31</sup> wherein said ~~plural bits of digital information~~ multi-bit binary data correspond to said pattern in accordance with an algorithmic transformation.

#### REASONS FOR ALLOWANCE

15 2. Applicant's arguments, see the fourth paragraph on page 15 of applicant's response, filed 23 April 2004, with respect to the rejection of claim 40 as being anticipated by Gasper et al. '730 have been fully considered and are persuasive. The rejection of claim 40 has been withdrawn.

20 3. The following is an examiner's statement of reasons for allowance: As pointed out by applicant, the pattern of Gasper et al. '730 is not "noise-like," as require by claim 40, so that claim 40 is allowable over the prior art. In addition, as also pointed out by applicant in the first paragraph on page 15 of the response filed 23 April 2004, Gasper et al. '730 fails to teach that the pattern encodes multi-bit binary data, as now required by amended claims 1 and 30. Finally, the remaining independent claims each variously sets forth additional limitations that are not taught or suggested by any of the prior art. Specifically, claim 5 requires that the pattern include  
25 a mesh of thin lines; claim 7 stipulates that the pattern impart a colored tint to the substrate;

claim 9 defines the processing that produces the pattern as locally changing an ink absorption attribute of the substrate; claims 10 and 37 each specify that the pattern degrades when photocopied so that copies can be distinguished; claim 17 requires that different regions of the substrate convey different watermark payloads; claims 22 and 38 each tailors a printing parameter based on the digital information; claims 24 and 47 each stipulates that the digital information can only be decoded by a user having secret knowledge; claims 25, 26 and 28 each variously defines the substrate as an envelope, stationery or blank magazine or newspaper printing stock; and claim 43 stipulates that the pattern be defined by generating a tile specifying one of N luminance values for each of plural different areas, consolidating the N values down to M (which is less than N), and forming lines between the areas in response to the consolidated luminance values. Since none of the prior art teaches or suggests any of these features in combination with the other elements of the claimed invention, these claims are allowable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

4. Claims 1-4, 5-7, 8, 9-11, 12-16, 17, 18-21, 22, 23, 24-26, 27, 28, 29, 30-36, 37, 38, 39, 40, 41-42, 43-44, 45-46, 47, 48, 49 and 50 (renumbered for issue as 1-4, 19-21, 5, 22-24, 6-10, 25, 11-14, 26, 15, 27-29, 16, 30, 17, 31-37, 45-46, 38, 47, 39-40, 48-49, 41-42, 50, 43, 18, and 44, respectively) are allowed.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Johns whose telephone number is (703) 305-4788. The examiner is normally available Monday through Friday, at least during the hours of 9:00 am to

B



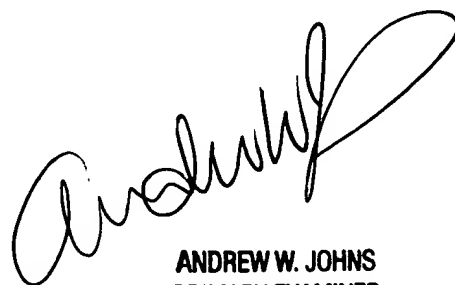
3:00 pm Eastern Time. The examiner may also be contacted by e-mail using the address: [andrew.johns@uspto.gov](mailto:andrew.johns@uspto.gov). (Applicant is reminded of the Office policy regarding e-mail communications. See M.P.E.P. § 502.03)

5           If attempts to reach the examiner are unsuccessful, the examiner's supervisor, Leo Boudreau, can be reached on (703) 305-4706. The fax phone number for this art unit is (703) 872-9306. In order to ensure prompt delivery to the examiner, all unofficial communications should be clearly labeled as "Draft" or "Unofficial."

10           Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center Receptionist whose telephone number is (703) 305-4700.

15

A. Johns  
19 October 2004



ANDREW W. JOHNS  
PRIMARY EXAMINER